UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/023,401	02/12/1998	GARY S. JACOB	SRL 6067	6896

321 7590 01/15/2004

SENNIGER POWERS LEAVITT AND ROEDEL
ONE METROPOLITAN SQUARE
16TH FLOOR
ST LOUIS, MO 63102

EXAMINER	
TRAVERS, RUSSELL S	

ART UNIT	PAPER NUMBER
1617	

DATE MAILED: 01/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/023,401	JACOB ET AL.	
	Examiner	Art Unit	
	Russell Travers, J.D.,Ph.D	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Peri d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *22 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *37-75* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *37-75* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 16 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

The amendment filed September 22, 2003 has been received and entered into the file.

Applicant's arguments filed September 22, 2003 have been fully considered but they are not deemed to be persuasive.

Claims 37-75 are presented for examination.

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to adequately teach how to make and/or use the invention, and thereby failing to provide an enabling disclosure.

The instant specification fails to provide information that would allow the skilled artisan to practice the instant invention without undue experimentation. Attention is directed to *In re Wands*, 8 USPQ2d 1400 (CAFC 1988) at 1404 where the court set forth the eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing *Ex parte Forman*, 230 USPQ 546 (BdApls 1986) at 547 the court recited eight factors:

1) the quantity of experimentation necessary,

2) the amount of direction or guidance provided,

3) the presence of absence of working examples,

4) the nature of the invention,

5) the state of the prior art,

6) the relative skill of those in the art

7) the predictability of the art, and

8) the breadth of the claims.

Applicant fails to set forth the criteria that defines those compounds envisioned as "nucleotide antiviral compound" or "nucleotide antiviral" useful for practicing the invention as claimed. Additionally, Applicant fails to provide information allowing the skilled artisan to ascertain these compounds without undue experimentation. In the instant case, only a limited number of compounds envisioned as "nucleotide antiviral compound" or "nucleotide antiviral" useful for practicing the invention examples are set forth, thereby failing to provide sufficient working examples. It is noted that these examples are neither exhaustive, nor define the class of compounds required. The pharmaceutical art is unpredictable, requiring each embodiment to be individually assessed for physiological activity. The instant claims read on all compounds envisioned as "nucleotide antiviral compound" or "nucleotide antiviral" useful for practicing the invention as claimed, necessitating an exhaustive search for the

embodiments suitable to practice the claimed invention. Applicants fail to provide information sufficient to practice the claimed invention, absent undue experimentation.

Claims 37-54, 58-66, 70-71 and 75 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification.

Claims 37-54, 58-66, 70-71 and 75 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 37-54, 58-66, 70-71 and 75 are rendered indefinite by the phrases "nucleotide antiviral compound" or "nucleotide antiviral" and thereby failing to clearly set forth the metes and bounds of the patent protection desired. Criteria defining medicaments that fall under the "nucleotide antiviral compound" or "nucleotide antiviral" penumbra are not set forth in the specification, thereby failing to provide information defining the instant inventions metes and bounds. Applicant's term fails to clearly define the subject matter encompassed by the instant claims, thus is properly rejected under 35 USC 112, second paragraph.

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the

subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 37-75 are rejected under 35 U.S.C. § 103 as being unpatentable over Partis et al, Chang et al et al, Applicants' admissions on the record and Gish et al.

Partis et al, Chang et al and Gish et al teach, and Applicants admit on the record the claimed compounds as old and well known in combination with various pharmaceutical carriers and excipients in a dosage form. These medicaments are taught as useful for treating various viral infections, to include Hepatitis infections. Claims 36-73, and the primary references, differ as to:

1) the concomitant employment of these medicaments,

2) administration levels of the medicaments, and

It is generally considered prima facie obvious to combine two compounds each of which is taught by the prior art to be useful for the same purpose, in order to form a composition which is to be used for the very same purpose. The idea for combining them flows logically from their having been used individually in the prior art. As shown by the recited teachings, the instant claims define nothing more than the concomitant

use of two conventional anti-antiviral agents. It would follow that the recited claims define prima facie obvious subject matter. Cf. In re Kerhoven, 626 F.2d 848, 205 USPQ 1069 (CCPA 1980).

Claims herein recited require specific dosage levels. Determining the active ingredient dosage level required to effect optimal therapeutic benefit is well within the Skilled Artisan's purview and the benefits of achieving such maximization obvious, to said skilled artisan. The claims merely recite the obvious employment of old and well known active ingredients, carriers and excipients. Thus, the only issue presented in the instant application is the obviousness of the claimed antiviral methods.

The skilled artisan, possessing a compound for a therapeutic use possesses that compounds analogs, homologs, isomers, bioisosteres, salts, acids and esters for the same use. To employ an analog, homolog, isomer, bioisostere, salts acid and ester for the same use therapeutic use would have been obvious to the skilled artisan. Prior art use for the same therapeutic purpose would have motivated the skilled artisan to employ N-alkyl derivatives of deoxynojirmycin (as specifically taught by Partis et al (see examples 13 and 16) for treating viral disease and enjoy a reasonable expectation of therapeutic success. Partis et al specifically teach those compounds recited in the presented claims.

RESPONSE TO ARGUMENTS

Examiner finds those arguments provided as rebuttal to the rejections of paper 15 unconvincing. Attention is directed to specification page 4 (line 12) page stating "AZT appears to have little use against (HBV) virus", yet at specification page 19 (line 19) Applicants list AZT as "useful" for practicing the invention as envisioned. In the face of such internal inconsistencies, the skilled artisan would not find guidance, in the specification as filed, to select compounds envisioned as useful, absent undue experimentation.

Applicant's arguments presented to rebut the rejection under 35 USC 112, first and second paragraphs filed September 22, 2003 have been fully considered but they are not deemed to be persuasive. Examiner notes the claims are directed to "nucleoside antiviral" compounds and "nucleotide antiviral" compounds, yet those compounds illustrated are neither exhaustive listing for these compound classes, nor recite only "nucleoside antiviral" compounds or "nucleotide antiviral" compounds. A nucleoside is a compound formed by conjoining a **sugar** and a purine base or a pyrimidine base. In the instant Applicants indicate PMEA, ddC, FTC and 3TC as residing under the "nucleoside antiviral" compound or "nucleotide antiviral" compound penumbras, yet these compounds would not be classified as such. Examiner notes a nucleotide is formed by phosphorylating a nucleoside. Absent a specific recitation of those compounds envisioned, the specification fails to enable the invention as claimed.

Use of the terms nucleotide, and nucleotide to encompass those compounds simply containing purine and pyrimidine base components renders the instant claims defective under 35 USC 112, first and second paragraphs.

Those presented claims are directed to "antiviral compounds" not a class of compounds, as constructively argued by Applicants. Based on the instant disclosure, the skilled artisan would have no problem identifying those compounds falling into the classes of nucleotide, or nucleosides envisioned by Applicants, yet the burden of identifying those compounds possessing "antiviral" activity would fall to those practicing the **invention as claimed.** Examiner must read the invention **as claimed**, not as envisioned by Applicant. Additionally, Examiner can not read limitations from the specification into the claims as presented. Absent some guidance directing the skilled artisan to those compounds possessing the desired "antiviral" activity, the instant claims remain properly rejected under 35 USC 112, first and second paragraphs.

Examiner notes Applicants' failure to address those teachings of Partis et al. This failure renders the presented rebuttal arguments unconvincing. Attention is directed to Partis et al teaching those compounds herein claimed as, old, well known and useful as broadly antiviral agents (see examples 13-14, column 11). Simply stated, those compounds herein envisioned are old and well known for the claimed antiviral use. Motivation for employing the claimed compounds concomitantly resides in the prior art use of these compounds individually for this envisioned antiviral use.

Applicant's attention is again drawn to In re Dillon, 16 USPQ2nd 1897 at 1900 (CAFC 1990). The court sitting in banc ruled that the recitation of a new utility for an old and well known composition does not render that composition new. Thus, recitation of intended use fails to distinguish old and well known therapeutic compositions. Additionally, determining the active ingredient dosage level required to effect optimal therapeutic benefit is well within the Skilled Artisan's purview and the benefits of achieving such maximization obvious, to said skilled artisan. The claims merely recite the obvious employment of old and well known active ingredients, carriers and excipients. Thus, the only issue presented in the instant application is the obviousness of the claimed antiviral compositions.

Attention is directed to Gish et al teaching those compounds herein claimed as useful for treating viral disease generally, and also to hepatic diseases possessing a viral etiology. As stated above, it is generally considered prima facie obvious to combine two compounds each of which is taught by the prior art to be useful for the same purpose, in order to form a composition which is to be used for the very same purpose. The idea for combining them flows logically from their having been used individually in the prior art. As shown by the recited teachings, the instant claims define nothing more than the concomitant use of two conventional anti-viral compounds. It would follow that the recited claims define prima facie obvious subject matter. Cf. In re Kerhoven, 626 F.2d 848, 205 USPQ 1069 (CCPA 1980).

Applicants aver unexpected benefits residing in the claimed subject matter, yet fail to fails to set forth evidence substantiating this belief. Evidence as to unexpected benefits must be "clear and convincing" *In re Lohr*, 137 USPQ 548 (CCPA 1963), and be of a scope reasonably commensurate with the scope of the subject matter claimed, *In re Linder*, 173 USPQ 356 (CCPA 1972). The data provided by Applicants is not reasonably commensurate in scope with the instant claims. Absent claims commensurate with the showing of unexpected benefits, or a showing reasonably commensurate with the instant claims, such claims remain properly rejected under 35 USC 103.

It is well known by the skilled artisan that carriers and excipients are employed to enhance the activity of active ingredients. Thus, the skilled artisan would expect conventional excipients and carriers to be useful concomitantly, absent information to the contrary. The instant carriers and excipients are not employed concomitantly in the prior art, thus only obviate their concomitant use.

Applicant's attention is drawn to In re Graf, 145 USPQ 197 (CCPA 1965) and In re Finsterwalder, 168 USPQ 530 (CCPA 1971) where the court ruled that when a substance is unpatentable under 35 USC 103, it is immaterial that applicant may have disclosed an obvious or unobvious further purpose or advantage for the substance.

Examiner would favorably consider claims directed to those medicaments providing unexpected therapeutic benefits, as averred herein.

No claims are allowed.

Any inquiry concerning this communication should be directed to Russell Travers at telephone number (703) 308-4603.

R. S. Travers, J.D., Ph.D.
Primary Examiner
Art Unit 1617